

## **FRAMING AND WORD ALIGNMENT FOR PARTIALLY RECONFIGURABLE PROGRAMMABLE CIRCUITS**

### **ABSTRACT OF THE DISCLOSURE**

**[0054]** Techniques for aligning the data path inside a receiver to the word and frame boundaries of an input data stream using reconfigurable programmable circuit elements are provided. The input data stream can be organized according to a data transmission protocol such as SONET or SDH. A first programmable circuit elements are initially configured as a frame detection block. The frame detection block detects the boundaries between words in the input data. A portion of the frame detection block is then reconfigured as a word align block. Another portion of the frame detection block is reconfigured as a block that monitors bits in each frame to ensure that the frame boundaries remain in the same bit positions. If the frame boundaries change, the programmable circuit elements are reconfigured to implement the frame detection block again.

60022438 v1